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ABSTRACT

This planning guide describes step-by-step procedures to assist school principals in integrating technology into the curriculum. It contains the following sections: (1) "Technology in the Catholic School"; (2) "Leadership and Decision Making"; (3) "Preassessment of Current Technology," including hardware, software, the physical plant, classroom setup, committee reflection, and summary; (4) "Software," including types of software and the software plan; (5) "Hardware," including hardware assessment, categories of technology hardware, and the hardware plan; (6) "Telecommunications"; (7) "Staff Development"; (8) "Funding"; and (9) "Putting the Plan into Action." The appendix provides 21 worksheets to be used in gathering data during the planning process. (MES)

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POINT TO THE FUTURE:

A PRINCIPAL'S TECHNOLOGY PLANNING GUIDE

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POINT TO THE FUTURE:

A PRINCIPAL'S TECHNOLOGY PLANNING GUIDE

JIM BRENNAN, ED.D.

DEPARTMENT OF ELEMENTARY SCHOOLS
NATIONAL CATHOLIC EDUCATIONAL ASSOCIATION

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DEDICATION

This book is dedicated to Catholic educators across our land who daily are faced with the challenge of preparing our children for the next millennium. May this book be a source of support for you, as you "point to the future."

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PREFACE

Technology is everywhere, and it has invaded the schools. No revolution in education has the power to change American schools so quickly and dramatically as the technological revolution. Professors of education previously have said it takes 20 years for an educational innovation to go from the drawing board to the classroom. Technology has changed this. Almost daily new educational aids are coming on the market and finding their way into the hands of effective teachers.

Over the past several years, numerous researchers and writers have documented the effectiveness of Catholic schools. The achievement of their students, their infinitesimal dropout rate, their high percentage of students completing college degrees represent unrivaled records in American education. Catholic schools are known for their emphasis on the basics and for their hesitation to jump on the bandwagon of the latest educational fad or innovation.

Educational technology, however, is not a fad or fleeting innovation. It is here to stay and has the potential to greatly improve the learning environment. If Catholic schools are to maintain their place of honor in the minds of many Americans, they must adapt technology to their programs. If they do not, the golden age of Catholic schools will become merely a faint glimmer of the past.

Though each Catholic school has the same mission, the evangelization and education of its students, each school is very different. That is why when the request came for a book on technology in the Catholic school, the NCEA Department of Elementary Schools Executive Committee (DESEC) shied away from developing a book that would present a plan of action. One plan will not fit all situations. The committee wisely decided instead to produce a planning guide to help schools move deliberately toward integrating technology into their curriculum.

Dr. Jim Brennan was asked to write this book because he has extensive knowledge of technology and has experience in guiding his own school and, more recently, other schools as they integrated technology into their curriculum. This manual provides a planning process. The numerous activities and worksheets move schools' technology planning committees from an evaluation of their current status, to development of plans, and finally to implementation of those plans.

The NCEA Department of Elementary Schools is grateful to many people for their assistance with the production of this publication. Members of the technology subcommittee of DESEC (Bill Langley, principal of St. Viator School, Las Vegas, Nev.; Helen Petropoulos, principal of Ste. Genevieve du Bois School, St. Louis, Mo.; and Dan Sherman, principal of St. John School, Seattle, Wash.) had the opportunity to review the original manuscript. The Department is also grateful to these reviewers of the manuscript: Sr. Martha Rolley, SNJM, director of private schools, Apple Computer, Inc., and from the Archdiocese of Dubuque, Father Thomas Toale, superintendent of schools, and Jim Osterberger, director of educational planning and technology. Catherine Kealey, educational consultant, served as a critical reviewer of the final manuscript. Tara McCallum, NCEA Department of Elementary

Schools editorial assistant, proofread and edited the final manuscript. Beatriz Ruiz of the NCEA Communications Department designed the cover and the book's layout.

The NCEA Department of Elementary Schools offers this book to its members with the hope that principals and school technology committees will use it and develop and implement effective technology plans for their schools. Such plans will ensure that they will be American Catholic Schools for the 21st Century and that the golden age of Catholic education will continue.

Kieran Hartigan, RSM, P.D.
President

Robert J. Kealey, Ed.D.
Executive Director

NCEA Department of Elementary Schools
Feast of the Birth of Mary, 1997

INTRODUCTION

Even if you're on the right track, you'll be run over if you stand still.

—*Mark Twain*

The purpose of this book is to come to the aid of the principal who has decided that the use of technology in his or her school is becoming more of a necessity than a luxury. In attempting to do this I will provide a means by which a principal can develop an initial plan to address this issue of technology in the schoolhouse. I hope to break down the process into small, understandable, and achievable components that can be accomplished with as little pain and suffering as possible. Throughout the book, surveys and needs assessments are provided which the principal and the technology planning committee can use to gather sufficient and appropriate data to assist the principal in making effective decisions regarding technology. The intended outcome is to promote the development of a school-site technology plan.

A technology plan is not something that can be created overnight, nor is it something that is impossible. As the principal leads or supervises the process of moving the school more fully into the area of technology, it is recommended that a committee of teachers and parents be utilized to address the activities that will need to be accomplished. The principal is encouraged to read through this book, however, before deciding whom to call together or even to call a meeting. The principal should have a general idea of where he or she sees the committee heading before the actual meeting takes place. This book will provide some insight to that end.

I wish to acknowledge the help of Brian Henderson of the Diocese of Oakland, who shared many of his ideas with me as I outlined the manuscript for this book. I also would like to thank my wife, Brenda, and my children, Megan and Colin, for their support and encouragement during this project.

Jim Brennan, Ed.D.
Assistant Superintendent of Schools
Diocese of San Jose, California
Feast of the Birth of Mary, 1997

SECTION 1

TECHNOLOGY IN THE CATHOLIC SCHOOL

American Catholic Schools for the 21st Century open minds and hearts and doors to an increasingly diverse world, and prepare students' minds and hearts and hands to live wisely and generously in a technological, complex and interdependent world.

—*National Catholic Educational Association, 1994*

To deny that computers will be a part of the future for our students is to deny reality. As with many other innovations, we may approach technology with some suspicion, but we must reach a point where we realize that it is something that can be good for our students. Technology is not the first innovation to be questioned. A few quotes illustrate this point:

"Students today depend on paper too much. They don't know how to write on a slate without getting dust all over themselves. They can't clean a slate properly. What will they do when they run out of paper?" (Principals' publication, 1815)

"Students today depend too much on ink. They don't know how to use a pen knife to sharpen a pencil. Pen and ink will never replace the pencil." (Teacher's journal, 1815)

"Students today depend too much on store-bought ink. They don't know how to make their own. When they run out they will be unable to write words or ciphers until their next trip to the settlement. This is a sad commentary on modern education." *Rural American Teacher*, 1928)

"Students today depend on these expensive fountain pens. They can no longer write with a straight pen and nib. We parents must not allow them to wallow in such luxury to the detriment of learning how to cope in the real business world which is not so extravagant." (*PTA Gazette*, 1941)

"Ballpoint pens will be the ruin of education in our country. Students use these devices and then throw them away. The American values of thrift and frugality are being discarded. Business and banks will never allow such expensive luxuries." (*Federal Teachers*, 1950)

"It seems to me that having all this stuff on-line will just encourage kids to not pay attention in class to what's being written on the chalkboard and just go home and check their assignments on their computers." (A parent/teacher meeting, 1995)

These quotes are humorous, but, hopefully, they also make a very clear point: What is new is not always readily accepted. At this time, however, one does not have to look far to see that technology is not a fad but a phenomenon that is here to stay.

Our lives and our work are touched by technology daily. It is important for our children not only to prepare to live and work in a technological world, but also to have the ability to use it as a means to learning.

The intent of this book is to help implement technology, not to debate the efficacy of it in schools. I acknowledge, however, the fact that if Catholic schools want to maintain a quality Catholic education, it is imperative that they consider moving in the direction of technology.

Actually, the implementation of technology supports some important tenets of the National Congress on Catholic Schools for the 21st Century, which NCEA sponsored in 1991 to prepare a vision for the next millennium. In *The Catholic School and Society*, a document from the National Congress, John Convey (1991) challenged us to create a global awareness and an appreciation for the diverse cultures of the world. Technology alone cannot respond to this challenge, but it can bring the world to our schoolrooms. Contact with classes in other states or countries no longer has to be done through a written medium; rather, a live, real-time conferencing via technology will soon be commonplace for children sitting in classrooms. They will have the opportunity to interact through technology with other cultures around the world.

Karen Ristau (1991), in her article in preparation for the National Congress "The Challenge: To Provide Leadership within Catholic Schools," pointed out that as leaders, we must establish direction, align people, and motivate and inspire. Again, technology cannot do this alone, but it can be one means to achieve our overall purpose. If a clear direction for improvement is established, what parent will not be motivated to support the best possible situation for his or her child?

Carleen Reck, SSND, (1991), writing in preparation for the National Congress, focused on Catholic identity. She challenged schools to address possible futures in terms of communications as well as action. Technology will continue to create options for quicker, clearer, and wider ranges of communication.

Technology is not a Catholic phenomenon. It is a phenomenon of the world in which we live. To deny technology is to deny reality. By accepting technology, we can use it as one means to further promote the mission of Catholic schools, that is, to spread His word, build community, and be of service. Can we afford not to accept technology and respond to it?

Throughout this book, sample worksheets are utilized to facilitate the gathering of information and to promote discussion of key concepts affecting the school and its use of technology. A complete, blank copy of all the sample worksheets presented can be found in the Appendices.

The activity for this section, Sample Worksheet 1.1, asks you to identify your school philosophy statement and then, after discussing it, to identify how technology can support your school philosophy. This exercise should be a catalyst for an interesting and important discussion.

SAMPLE WORKSHEET 1.1
TECHNOLOGY AND THE SCHOOL PHILOSOPHY

1. **Identify the school's philosophy statement.**

2. **First individually, then as a group (faculty or committee), identify how you believe technology can support the philosophy of the school.**

REFERENCES

Convey, J. J. (1991). Catholic schools in a changing society: Past accomplishments and future challenges. *The Catholic School and Society*. Washington, DC: National Catholic Educational Association.

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Reck, C., SSND. (1991). Catholic identity. *The Catholic Identity of Catholic Schools*. Washington, DC: National Catholic Educational Association.

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SECTION 2

LEADERSHIP AND DECISION MAKING

American Catholic Schools for the 21st Century value and empower leadership that is visionary, innovative and collegial.

—*National Catholic Educational Association, 1994*

The principal is obviously a key person in the implementation of technology into the everyday operation of a school. Although the principal does not need to become the local expert in technology, he or she does need to provide consistent and positive leadership in this area. Leadership begins with being a role model. This means the principal should be a regular user of technology. Whether sending the staff an administrative bulletin on a local area network or using a presentation software program to communicate a point to the school board, the principal must be willing to use the technology at hand.

Although the attitude and practices of the principal are important, they are not all that is needed to provide positive leadership for implementing technology in the school. The expertise, interest, and commitment of faculty, staff, school board, and parents in general are contributing factors to success. The wise principal will identify the types of individuals, and the people themselves, needed to provide the necessary guidance as the school begins to integrate technology into its program. From these leaders the principal will begin to establish a steering committee that will be a catalyst for the formulation and implementation of a technology plan.

Prior to naming a technology committee, it would be wise for the principal to work with the faculty or a subcommittee of the faculty to determine the direction that the school should take in the area of technology. The purpose of this subcommittee would be to clearly specify the value of integrating technology into the school's curricular program. It is important to make clear from the start that the use of technology in the school program would serve the school and its mission and not vice versa. This means that the subcommittee will need to review its mission statement to identify the key values that have been articulated for the school. Next, it will need to do some reading and research and/or possibly attend a workshop on the use of technology in schools and within the curriculum. It is of the utmost importance that all involved in this subcommittee have a clear understanding of these components.

Once this homework is complete, the subcommittee should begin to put together a mission statement regarding technology and its use at the school. Ultimately, this technology mission statement must be affirmed through consensus of the faculty, the technology committee, and other significant groups concerned with the overall mission of the school. It is necessary to have a thorough understanding regarding technology's role in the school and the education process. With this clearly articulated from the outset, it becomes the guiding force behind decisions in this area.

The principal needs to identify how decisions will e made for the project. The decision-making process should be discussed at length before getting into any substantive issues. See Sample Worksheet 2.1 below for guidance in developing the school technology mission statement.

SAMPLE WORKSHEET 2.1 - SCHOOL TECHNOLOGY MISSION STATEMENT

"We Believe" Statements: What do we believe about technology and the school?

Resource Citations: What are some possible resources that support our beliefs?

We-Believe Statement	Resource Citation
1.	
2.	
3.	
4.	
5.	

After the group comes to consensus on the we-believe statements, these are used as the basis for the group to create the short technology mission statement.

The principal, or the principal's representative, needs to give leadership throughout the process, providing motivation and encouragement to continue the project while also ensuring that the activities promote and develop the mission of the school. In essence, it is not technological expertise that the principal needs; rather, as with other areas, the challenge of the principal is to guide and coach the group within the context of the mission and the intent of the curriculum.

The charge of the technology committee is to move forward under the guidance of the mission statement and the supervision of the principal. The principal needs to put together a committee that can meet the challenge of effectively integrating technology into the heart of the school. Thus, the activities designated in this section are intended to help gather appropriate information as the principal puts together this technology committee. Notice that several areas of expertise are identified in Sample Worksheet 2.2 below. Review these areas to ensure that all required expertise is included. If necessary, add individuals after the technology committee is formed.

SAMPLE WORKSHEET 2.2 - THE TECHNOLOGY COMMITTEE

Expertise	Member
1. Knowledge of Networks	
2. Knowledge of Software	
3. Fund-raiser	
4. Curriculum and Instruction (Faculty member)	
5. Curriculum and Instruction (Faculty member)	
6. Local Business/User	
7. Parent/School Board Person	
8. Parent/Parent Club Person	

(Note: People selected for positions 4,5,6,7, and 8 do not need to be technology experts.)

At the risk of being redundant, it is important to emphasize, once the mission statement is developed and affirmed, that the potential members of the technology committee should be asked to reflect upon and discuss the mission statement and the purpose of the committee. The individuals must be not only clear about this mission but also ready to support it through their expertise. This committee, in concert with the principal, then must be willing to provide the leadership for the development of action plans to realize the mission for technology at the school. A key component of its work will be communication.

The sample worksheet below provides a standard outline to clearly identify information that needs to be communicated within the committee or to the public at large.

SAMPLE WORKSHEET 2.3 - TECHNOLOGY UPDATE

Date

What Has Happened

Contributing People

Impact on Students

Mode of Communication

Next Steps

The vision of the leader in a project such as this is crucial. It is important that the principal be key in the development of this vision. Even if the principal does not understand the technical aspects of the project, he or she must have a vision of what it can do for students. This may mean some formal or informal updating on the potential of technology for schools. The main point is that the principal cannot go into this planning process blind or at the mercy of non-educators.

Although the principal or the principal's designee must clearly be the guiding light for the vision, it is significant, as progress is being made, that the principal communicate this to the general public in a way that informs them of achievements and affirms those who are bringing the vision to life, especially if they are non-educators.

REFERENCE

National Catholic Educational Association. (1994). *Lighting new fires: American Catholic schools for the 21st century* [Program brochure]. Washington, DC: Author.

SECTION 3

PREASSESSMENT OF CURRENT TECHNOLOGY

Every self-study instrument provides for the actual assessment of the school. This tool strongly emphasizes two other steps: awareness to assure readiness of the school community and analysis to guarantee movement toward a long-range improvement plan. —*Carleen Reck and Judith Coriel, 1984*

Before you decide where you are going, you need to know where you are. The first task to be done is to assess the current status of technology and the physical plant at your school site. The purpose of this section is to clearly identify where the school is now, before the technology committee decides where the school is headed in technology. Completing the sample worksheets for the activities in this section should give you a detailed understanding of the hardware and software that are currently available in the school.

If the school has already gathered this information, then there is no reason to repeat this exercise. Please note that you need to have the current information at your disposal so that the planners can incorporate into the plan the current conditions at the school. The information at hand should be reasonably recent and comprehensive in its scope.

TECHNOLOGY HARDWARE

The first focus of the preassessment is the technology hardware in your school. The sample worksheets are explained and examples given to help you organize these data so you can make decisions based on information regarding what is already present in the school.

SAMPLE WORKSHEET 3.1 – EXISTING TECHNOLOGY HARDWARE

Sample Worksheet 3.1 provides a format for listing information concerning the quantity and condition of the technology hardware in your school. This information is vital when a school is considering the formation of a technology plan.

Below are descriptions of some types of equipment that you may have in your school. This is not an exhaustive list, so there may be additional items you have that you will want to include.

Computers. The computer is often the first item you think of when referring to technology. A computer is simply any machine at your school site that may plug in; has a screen, keyboard, and/or mouse; and does some operations.

Audiovisual Equipment. This type of technology is present in many schools. You may be able to use this existing equipment often with new technologies, but you need to know specifically what you have in the school. Included in this category are such items as the television, VCR, camcorder, presentation devices, and other related equipment.

Peripherals. Peripherals are items that can be connected to a computer and carry out a supportive function. Common examples are printers, scanners, CD-ROMs, and modems. If you have computers or have access to a school or office that does, you can easily check for the current peripherals in your area.

Other. There may be items that you feel have not been included in a category or that do not fit in any category already identified. Please include them in the assessment. They may be items you will want to continue to use or to purchase, so they are important.

The following is a list with explanations of the categories you will be asked to use as you complete Worksheet 3.1.

- Equipment: Specifically identify by name or description what is being listed.
- Number: Indicate the quantity of each piece of equipment being listed.
- Brand: Name the commercial producer of the equipment and include any model name and/or number.
- Serial Number: Record this identifying number as a means to knowing precisely the number and type of equipment that is present.
- Location: Cite the exact location of the equipment.
- Date Acquired: Identify as best as is possible the date the school acquired the equipment.
- Condition: Record a value judgment of the functionality of the equipment. A forced-ranking scale from excellent, as the rating for a highly functional piece of equipment, to poor, as the rating for a piece of equipment not functioning properly, should be given. The ratings are excellent, good, fair, and poor.

- Comment: Document any specifications that should be known about the piece of equipment. For example, the television is 27" with a color monitor and is cable-ready. An important comment for computers is the configuration. A configuration of 16/200 indicates that the computer has 16 megabytes of random access memory and a hard drive of 200 megabytes.

Review the sample worksheet below as a preparation for completing the worksheet in Appendix E.

SAMPLE WORKSHEET 3.1 - EXISTING TECHNOLOGY HARDWARE

Equipment	No.	Brand	Serial #	Location	Date Acquired	Condition	Comment
Television	5	Zenith	TM2345 to TM2349	Grades 3-7	Sept. 1992	Fair	Not cable-ready
VCR	3	Mitsubishi	8314-IU to 8316-IU	Grades 5-7	June 1995	Good	Many features
Computer	2	MacLCII	SXII011 LGII021	Grade 1 Grade 7	June 1993 Aug. 1993	Good Good	4/40 configuration 8/40 configuration
Computer	20	Mac Quadra 700	Qtr 3659 to Qtr 3678	Computer lab	June 1994	Good	Only have internal CD-ROMs
Computer	2	Mac IIsi	LSX304 LSX305	Office	July 1993	Good	6/80 configuration for both
Camcorder	1	Sony	LSW787	Computer lab	Nov. 1992	Good	
Presentation device	2	LTV Pro	BV9804	Grades 1 and 2	Sept. 1995	Excellent	Connected to PowerMac 8500
Modem	1	Global Village 500	THN772	Office	Nov. 1995	Excellent	Connected to PowerMac 2460

TECHNOLOGY SOFTWARE

Similar to the sample worksheet on technology hardware, the next sample worksheet will enable you to list all the software that is currently in use or available at the school. The following are some types of software that you may have in your school. This is not an exhaustive list, so there may be additional items you have that you will want to include.

System Software and Utilities. This type of software is used to install, configure, and maintain computer systems and peripheral devices such as printers, CD-ROM drives, and modems. Included in this category are programs such as screen savers, virus checkers, and backup software.

General-Productivity Software. This category includes the software that is used for word processing, databases, spreadsheets, presentations, and communication. Some examples of general-productivity software are Microsoft Works, Microsoft Word, ClarisWorks, and Adobe Persuasion.

Teacher-Productivity and Administrative Software. Software programs such as Class Master (grade recording) and MacSchool (attendance, billing, etc.) can be instrumental when a school is attempting to increase faculty and staff use of computers and technology.

Student/Curriculum-Specific Software. This is probably the most common type of software at school sites. Software that assists students with math, spelling, writing, drawing, or problem solving has been available since the first computers entered schools.

Telecommunication Software. Telecommunications may be defined generally as transmission of information as words, sounds, or images over great distances. Telecommunication can be as simple as connecting a school to a parish center. In many schools, telecommunication has become a very powerful tool used by administrators, faculty, and staff. There are numerous types of telecommunication, but each has a few common elements: a computer, a modem, software, and a telephone line. As your telecommunication becomes faster and more complex, the modem may be replaced by other equipment, and the telephone line may be replaced by a more powerful connection. In Sample Worksheet 3.2, the focus is on "programs" that are used for telecommunication and on the other pieces that are used with the programs.

Multimedia/Graphics/Specialty Software. This category includes any software that was not covered in the preceding descriptions. Multimedia and graphics software, such as Photoshop, MacDraw, VideoShop, and PageMaker, should be listed here.

Below is a list with explanations of the categories you will be asked to use as you complete Worksheet 3.2 in Appendix F.

- Title: Give the name of the software.
- Category: See the above listing.
- Disk Format: Indicate the type of disk (IBM or Macintosh) the program is on and the number of disks in the set.
- Serial Number: Give this number, which is usually located on the back of the first disk in a set of software disks.
- Hardware Reference: List the name of any specific piece of hardware that is related to this software.
- License Required: Make sure that you install or use only as many licenses

as you own. For example, if all grades (K-8) have ClarisWorks installed on one hard drive, you must own nine copies of ClarisWorks. If each of these rooms has two computers using ClarisWorks, you must own 18 copies, etc.

- Grade: List the targeted grade level or subject area, which is generally written on the packaging or box. This information is important when planning the overall software purchase for the school.
- Subject: Indicate the specific subject, if any, that the software is related to, e.g., reading, composition, history. Some software relate to a particular subject; others cut across several curriculum areas.
- Comment: Use this space to note other information pertinent to the use of the software.

SAMPLE WORKSHEET 3.2 - EXISTING TECHNOLOGY SOFTWARE

Title	Category	Disk Format	Serial #	Hardware Reference	License Required	Grade	Subject	Comment
System 7.5.3	System	CD-ROM	123456	Mac with 8 mb RAM	All Macs	All	All	
ScanJet II	Utility	IBM (6 floppy disks)	4RFT985	HP scanner	Single	All	All	Used in computer lab
Norton Utilities	Utility	Mac (4 floppy disks)	7889ggll	Mac	10	All	All	Used for teachers' computers
Microsoft Works 4.0	General: teacher productivity	Mac (6 floppy disks)	78TYRU	Mac	All	6 & 8	All	
Class Master	Teacher productivity	Mac (1 disk)	2345366	Mac	2	All	All	Grade-book program
Claris Organizer	General productivity	Mac (CD-ROM)	lle700	Mac	Office & teachers' computers	All	All	Calendar used by all computers
Story Teller	Curriculum	Mac	gu98708	Mac	Lab & classroom computers	All	Writing	
MathKeys	Curriculum	Mac	gyw879	Mac	Classroom computers	All	Math	
Oregon Trail	Curriculum	Mac	89707w	Mac	Classroom computers (grades 7 & 8)	All	Social studies	
HyperStudio	Multimedia	Mac	670ggf	Mac	Lab & classroom computers	All	All	Support for curriculum and creativity
PageMaker	Specialty	Mac	2j3345	Mac	Lab computers	All	All	Student and school publications
CONNECT	Telecommunication	Mac	7hge27	Mac	#7 computer in lab	All	All	Communication with schools and Internet

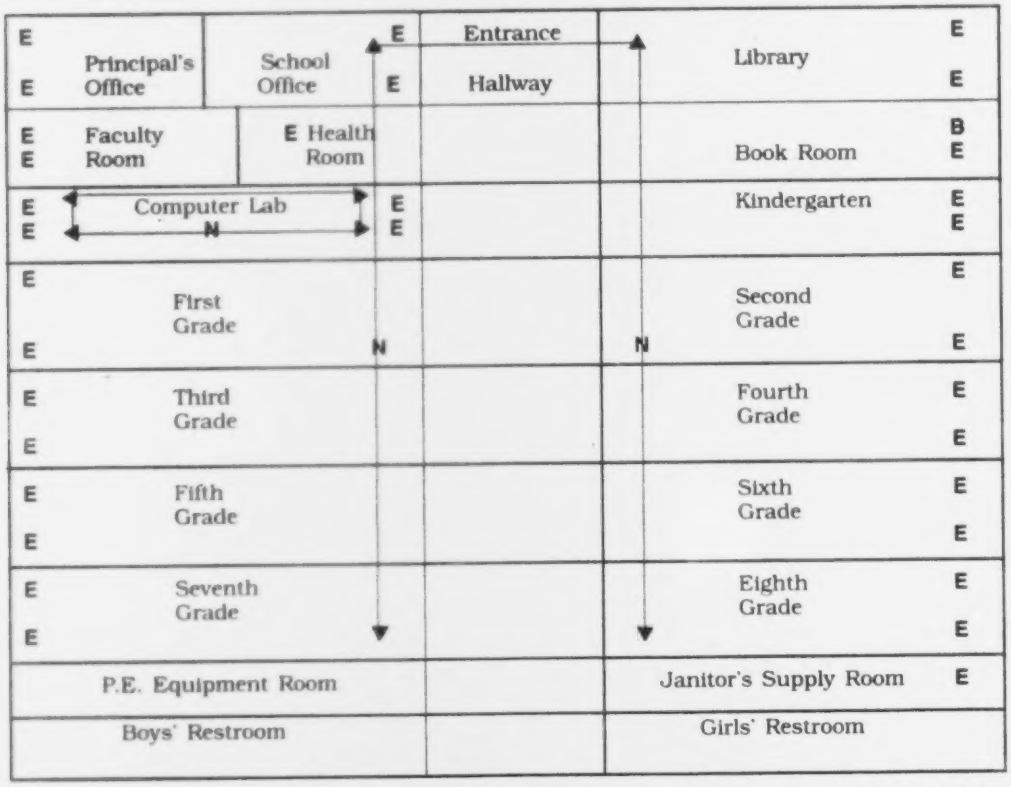
THE PHYSICAL PLANT

The activities/sample worksheets presented below are designed to help you determine the technological readiness of your physical plant.

Existing Electrical Outlets. Many classrooms are equipped with only one or two electrical outlets and, therefore, may not be ready for the introduction of a large amount of technological equipment. Draw a picture of the school's physical plant, identifying all electrical outlets, circuit breakers, and fuse boxes. Depending on the size of your building, you may be able to show the entire school on a page, or you may need to use a page for each building or floor. See Sample Worksheet 3.3 below.

Networks. A network is any group of computers that are connected together to share information, a printer, a CD-ROM drive, etc. Some schools have all the computers in the school connected, some have just those in the computer lab connected, and other schools find it helpful to have the office computers share a laser printer. On Worksheet 3.3 (Appendix G), you should describe any networks that are currently in use in the school. The description does not have to be technical, but knowing where networks currently exist will help you plan the future of any schoolwide networks. See how this was done in Sample Worksheet 3.3 below.

SAMPLE WORKSHEET 3.3
BUILDING'S EXISTING ELECTRICAL OUTLETS AND WIRING



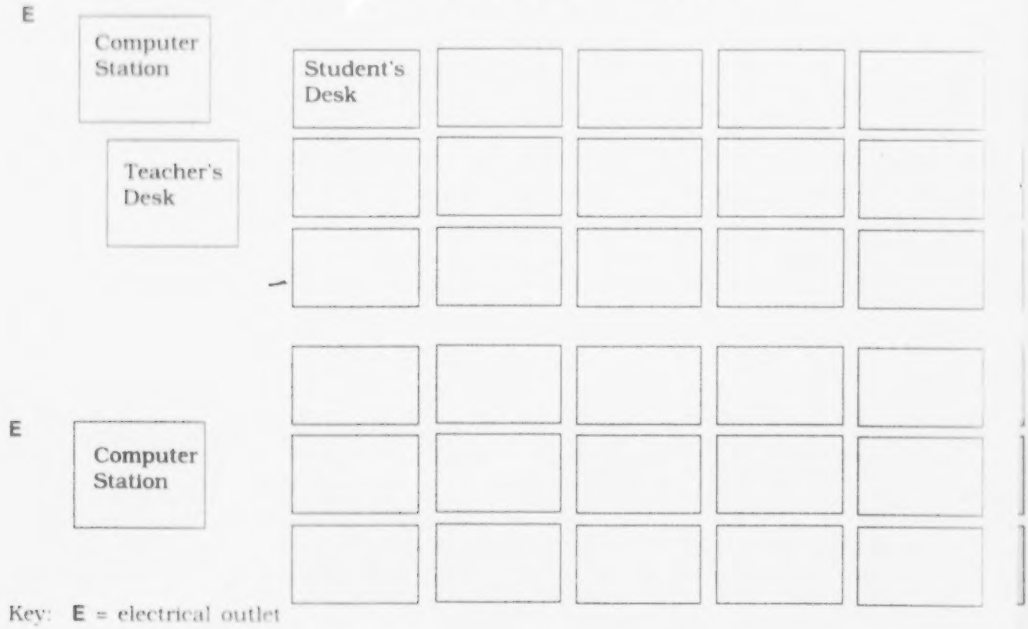
Key: **E** = electrical outlet; **B** = circuit breaker; **←N→** = network (network wiring runs along base of ceiling except for local network in computer lab)

CLASSROOM SETUP

One of the most pressing issues that relates to technology in education is the setup of classrooms. Many schools are beginning to put computers, printers, and peripherals into classrooms and are finding that space and design issues may make this task difficult. To enable you to visualize this problem, draw a sample classroom diagram and identify where the current technology may be located in that classroom. If current classroom setups differ greatly in relationship to the use of technology, you may wish to draw more than one diagram to reflect the various designs.

Sample Worksheet 3.4 is not intended to be a model setup but rather a representation of how classrooms are presently designed to handle technology. At this stage, you are just assessing where you are; later you will develop your plan.

SAMPLE WORKSHEET 3.4 CLASSROOM SETUP



Key: **E** = electrical outlet

COMMITTEE REFLECTION

The final activity of this section involves some reflection on what you now know. Sample Worksheet 3.5 below asks you to reflect on what information you have identified up to this point. This activity provides an opportunity for committee discussion on the status of the school before moving forward with any plans. First, each member of the technology committee should complete this worksheet alone. Then the technology committee should come together and prepare one response to each question that represents a consensus. (See Worksheet 3.5 in Appendix I.)

SAMPLE WORKSHEET 3.5 COMMITTEE REFLECTION

Equipment: Was I/the committee aware of all the different types of equipment that were considered to be technology?

Number: Was I/the committee aware of the amount of technology present in the school?

Location: Is the equipment located to be primarily used for administration or instruction?

Condition: Is the equipment in good shape? Is it being properly maintained?

Use: Is the equipment being used to its full potential?

These are just a few questions for reflection, but they are important ones. They begin to move you from the basic facts to making some critical decisions about technology in your school.

Some guidance regarding these areas is provided in later sections. Do not move too quickly through this exercise because it provides an opportunity for substantive discussions for your faculty and committee. The discussions will prove more interesting and helpful if, as suggested, the group that addresses these questions reflects on the questions individually before discussing them as a group.

SUMMARY

The activities in this section have provided direction for the accumulation of information about your school. After you have completed the worksheets in this section, you will have significant data on, and specific facts about, your school's technology. By reviewing these sheets, you can become aware of a number of items in the school, their location, and of areas of need. You may discover that each classroom has only one computer, that the computer lab has only one printer, or that Internet connectivity is lacking in the classrooms. You will be able to identify when items were acquired and some facts on their configuration, capability, and condition. This is important. As stated before, you need to know where you are before you can move forward.

Now let us point to the future.

REFERENCE

Reck, C., SSND, & Coriel, J., MSC. (1984). *Verifying the vision: A self-evaluation instrument for the Catholic elementary school.* Washington, DC: National Catholic Educational Association.

SECTION 4

SOFTWARE

A school can take a good first step toward successful software selection by appointing a review committee. By providing continuity and quality control, a review committee can reduce impulse buying. Many times a knee-jerk reaction will result in an ill-advised purchase that does not benefit the students.

—*Kenneth Collura, 1995*

Software for the computer enables the computer to perform certain functions and create specified products, such as text documents, spreadsheets, and graphs. In order to determine what software you may require, you will need to identify the tasks that you want to accomplish. You should also refer to the preassessment inventory (Worksheet 3.2 - Existing Technology Software, in Appendix F) to determine if you already have software to accomplish the identified tasks.

To assist you and the committee as you consider which software will be best suited for your plan, a needs assessment chart is provided; see Worksheet 4.1 in Appendix J. The completion of this chart will give you and the committee some insights into the software that may support the tasks you are attempting to do. The general categories considered in this assessment are productivity, administrative, and instructional support programs.

In this assessment, you are asked to specify the tasks you want to achieve and what type of software you would like to accomplish each task. This may require the committee to research which types of software currently best accomplish the tasks you identify for your community. Many choices exist for your consideration. This research can be performed by consulting local experts, professional journals, local computer clubs, support groups, or a neighboring school that has had successful experience with a particular type of software. This may take time, but it is a significant task.

Notice that the categories suggested leave room for you to include additional tasks that you may want to accomplish on the computer. To repeat once again, in the acquisition of software, it is most important to first identify what you need to accomplish and only then to seek the software that will best meet the needs of the school in relationship to its mission and philosophy.

Often, as you begin to specify the type of software that you may want, you will be able to identify examples. Always receive a demonstration of any software before investing any time or money in it. At the very least, local schools can be a source of research and demonstration.

TYPES OF SOFTWARE

The following categories of software will help you identify and understand the types of software you may want to use in the school. These categories are not meant to be exhaustive nor discrete. In fact, you will notice certain software that may apply to more than one category, which, in turn, may affect some acquisition decisions.

General-Productivity Programs (*Gen Prod*). The general-productivity programs computerize tasks that can be applied to a variety of work situations. Included in these are word processor, database, and spreadsheet programs.

Administrative Programs (*Admin*). Administrative programs typically are used by office personnel to perform specific tasks of the school office. In addition to general-productivity software, these may include financial software or specialized database programs.

Teacher-Productivity Programs (*Teachers*). These programs support the administrative work that teachers perform. In addition to general-productivity programs, these programs may include software related to keeping grade books, attendance, and making tests.

Student-Productivity Programs (*Students*). This software is directly and primarily used by students in academic tasks. Many of these programs relate to specific subjects, e.g., mathematics, composition, and social studies, and some programs integrate several areas of the curriculum.

Instruction-Support Programs (*Instr*). These programs provide an additional effective instructional strategy for the teacher.

Other Programs (*Other*). This is a general category that includes programs that do not fit into any of the above categories.

Rating is the key aspect in any needs assessment. This type of an assessment, however, will require much discussion and reflection on where the school is presently in the area of technology use and where it wants to be in the future. As a committee, you may decide all the software assessed is important, which is fine. You will probably need to prioritize, however, the purchase and implementation of the software. In terms of dollars and learning new tasks, not everything can be done at one time. A consensus will be most valuable as you go through the growing pains of implementation.

Following is an explanation of the categories you will be asked to identify as you complete Worksheet 4.1 (Appendix J).

- Software Task: Identify exactly what task you wish to accomplish with the software.

- Category: Indicate which of the six categories above addresses the task.

- Target Audience: Indicate which audience (*Admin, Teachers, Students, Other*) the software can potentially serve.

- Type of Program: Specify exactly what generic type of program (e.g., word processor, database, spreadsheet) is needed.

- Examples: Use this space to indicate specific examples of the generic type of program that is needed.

- Platform: Use this space to indicate on which platform (or type of computer) the software will operate. The two major platforms are Macintosh (Mac) or IBM-compatible (IBM). If the program can be purchased for either, the term *both* should be used.

- Need: Evaluate the degree of need that your school has for the program. Note that the need-rating field is a forced-ranking scale from 1 to 5, with 5 being most needed and 1 being least needed.

- Rating: Evaluate the performance of the proposed program. Again, a forced-ranking scale from 1 to 5 will be used, with 5 being the best in performance. As a committee, you will need to define what is of importance to you before you start evaluating. You will need to create a rubric that considers such items as speed, accuracy, sophistication, and technical support. Use such resources as professional journals or groups, a local consultant, or local schools that use the software successfully. A key reference point must be your mission statement.

Sample Worksheet 4.1 below is not intended to reflect endorsement of any product or platform, nor is it to be taken as an evaluation of any of the items presented. Its purpose is to give you an idea of how a completed worksheet might look.

Your completed worksheet (see Appendix J) will not be the end point, but rather a beginning from which the committee will research, discuss, and decide upon a recommended direction that will best serve the needs and the mission of the school.

SAMPLE WORKSHEET 4.1 - SOFTWARE NEEDS ASSESSMENT

Software Task	Category	Target Audience	Type of Program	Examples	Platform	Need	Rating
Produce text documents	Gen Prod Admin Teachers	All staff	Word processor	Microsoft Word Microsoft Works ClarisWorks	Both Both Mac	5	5 5 5
Assemble information	Gen Prod Admin	All staff	Database	FoxPro Microsoft Works ClarisWorks	Both Both Mac	4	5 4 4
Organize material for a speech	Admin Teachers	Admin Teachers	Presentation	Persuasion PowerPoint ClarisWorks	Mac Both Mac	3	4 5 3
Assemble specific student information	Admin	Staff	Student database	Mac School SASI	Mac IBM	4	4 4
Maintain financial information	Admin	Staff	Specialized spreadsheet	Quicken QuickBooks	Both Both	5	5 5
Maintain student records	Teachers	Teachers	Grade book	Grade Book Pro Class Master	Both Mac	4	5 4
Develop tests	Teachers	Teachers	Test-making program	Make Test	Mac	3	4
Develop tools to reflect learning and research	Students	Students	Student-created multimedia	HyperStudio	Mac	4	5
Develop instructional strategy	Instr	Teachers Students	Content-support programs	Apple Early Language Oregon Trail	Mac Both	4	5 5

SOFTWARE PLAN

After completing the needs-assessment worksheets, you should review them, as the specific committee charged with this task. A review will enable you to begin to prioritize the software programs that will best meet the needs of your school. Much discussion will need to take place regarding this prioritizing, so that a consensus can be reached that will support the needs and mission of the school.

Although this process may be time-consuming and challenging, it will be the foundation of clear and certain decisions for the good of the whole school organization. Through this process, a number of needs may be identified that obviously cannot be met at the same time for a variety of reasons. It is important to use prioritizing as you move to a plan, in order to ensure that the plan also includes the identified needs of the community that may be addressed in the immediate future or later.

Next, a clear timeline needs to be established. A school may want to computerize office functions first and then implement programs for teacher productivity. Once the teachers are comfortable with technology, then the school may seek to prioritize technology as a support for curriculum. The important factor is to have a sequence for implementation and an agreed-upon rationale to support it. The more this is communicated, the better you will be able to generate general support for the plan.

The next activity, Worksheet 4.2, should be undertaken only after you have completed the needs-assessment worksheets. As was discussed in an earlier section, before you reach this point your process for making decisions should be clearly known to all, so that once the input is received you will be able and ready to move forward with the information. As with all decisions, the mission statement of the school should be a guiding light in the discernment process.

The sample worksheet below is an example of a software plan. (A full-size blank worksheet is in Appendix K.) Your plan will be based on the information gathered from the needs assessment and research of the committee. The plan as presented is summative.

SAMPLE WORKSHEET 4.2 - SOFTWARE PLAN

Task Addressed	Target Audience	Program	Cost	Person Responsible	Acquisition Date
Word processing	Admin Teachers	Microsoft Word	$750 (site license)	Computer teacher	Sept. 1977
Organizing financial data	Admin	QuickBooks (2 copies)	$250	Secretary	Oct. 1997
Assembling family data	Admin	FoxPro (site license)	$1500	Secretary	Jan. 1998
Student grades management	Teachers	Grade Book Pro	$500 (site license)	Vice principal	April 1998
Student productivity	Students	HyperStudio	$1200 (site license)	Computer teacher	June 1998

This software plan is not an actual or a perfect plan, but a model for plans that will be designed for a particular school site. The prices cited are not actual prices, but rather hypothetical data for the worksheet. Programs that are projected for purchase more than six months from the creation date of the plan may need to be reviewed because of possible price changes, program revisions, or availability of a new program that is more appropriate to meet the identified needs.

Remember that this plan cannot be made in isolation; its components must be finalized in coordination with all parts of the technology plan. Each component will have a certain degree of reliance on other parts. The software decisions, for example, will need to be made based on the hardware that will be available to run the software, and staff development decisions will, at least in part, be affected by the training that is needed to support the new software.

Although it may be quite challenging at times, the planning process will give direction to the school in this area of its operation. It is important to address all these areas of planning with the utmost priority, in order to have any idea of where you are headed in the years to come in light of the needs of the community and the mission of the school.

REFERENCE

Collura, K. (1995, October/November). Shopping for software. *Momentum, 26*, 33.

SECTION 5

HARDWARE

The rapid advance of communication technologies and their impact on our educational environment require our full attention. New paradigms are emerging.

—*Sr. Angela Ann Zukowski, MHSH, 1995*

HARDWARE ASSESSMENT

You might have expected to delve into the area of hardware before considering software. Proceeding in this manner, however, clearly reinforces the notion that you need to identify what you want to do before considering a purchase of any kind, software or hardware. Ideally, once you have identified what you want to accomplish through software, you will have a general direction to follow in the acquisition of hardware to support your software and not have to adapt your plan to fit recently purchased hardware.

This section presents exercises to facilitate decisions about the hardware needed. Since you have addressed questions regarding purpose and have identified what you want to accomplish as you proceeded through the software plan, this section may not be as time-consuming. Nevertheless, research will need to be carried out regarding the types and brands of hardware that will be considered for purchase.

Again, a committee to gather the necessary information can be very helpful. The members can get information on hardware in many of the same places that they went for information on software, such as recognized local experts, professional journals, and computer clubs. A local school, as mentioned in the software section, can be one of the most valuable resources for hardware information. Perhaps you can get the best bit of research information by actually using the hardware for an extended period, not for just a five-minute introductory session. This is not always possible, but such an experience can be invaluable if you can get access to the machines.

CATEGORIES OF TECHNOLOGY HARDWARE

In preparation for assessing your hardware needs, categories of technology hardware are described below. Note that the categories are quite similar to the ones used in the preassessment. This list will help you to see clearly what you have as you decide where you want to go in this area.

Computers. When technology is being discussed, it often is equated totally with computers. Technology encompasses more than just computers, as you have

seen in your preassessment work. Computers are the first area considered here, but, again, recall that technology is much more than just the computer on your desk.

As you consider acquiring computers, you should keep in mind a number of variables. A computer has some internal components that will determine its capability and performance. Chief among these are speed of the processor, RAM, and hard-disk space. There are no magic numbers for these areas because they are constantly changing. Current standards can be obtained by your research committee from the identified sources for information. Check at least two sources for current standards when considering a purchase.

In any consideration of a computer purchase, you need to identify your requirements in regard to computer specifications (e.g., RAM, hard-disk size) and what components are included with the computer. Some of these requirements may be dictated by the software you have chosen. If a software program you intend to purchase or already have purchased requires a certain amount of RAM, then any computer you consider purchasing would need to at least meet those specifications.

Remember, a computer is a basic piece of equipment; do not assume anything is included with it when you are considering a purchase. For instance, the monitor is obviously a very key component of the computer. Some models have the monitor configured in the design of the computer, and others have it as an add-on to the basic unit. You need to know if the monitor is included and its size.

The monitor is not the only potential add-on. There are numerous others available and more on the way. These will be addressed in the next category, headed "Peripherals."

Remember, this book is intended to be a primer, and it will keep its focus at this level. However, one factor that you should consider as a next step in your technology development is networking. Very simply put, networking is the linking of computers and/or printers. This is most likely something that you will eventually want to do. Although networking will not be considered in this book, purchases of technology hardware should consider networking capability. Again, because technology and standards are constantly changing, you will need to do current research on them at the time of purchase. Currently, Ethernet is one of the networking capabilities that is desirable in many areas.

For the most recent information about technology and the integration of technology into the curriculum, register to receive the monthly NCEA technology newsletter ***Tomorrow's Schools Today***. Contact NCEA for information about this by E-mail at nceaelem@ncea.org.

Peripherals. Peripherals are items that are added to the basic computer machine. Components such as the monitor, CD-ROM drive, and speakers may come built into the design of the computer, as is the case with many lap-top computers. These may be acquired separately, however, as add-ons to your computer. You may decide to do this if you are able to purchase a computer at what you consider is a very good price and regard the additional expense of the peripheral(s) an effective way to put together your system. You may rate a particular peripheral as a much better component than the one that is ordinarily included with the computer being considered for purchase. Another reason some people tend to use peripherals is that when a built-in peripheral needs to be repaired or serviced, you lose use of the entire computer system. When external peripherals need service, however, you still have the use of the computer.

In Sample Worksheet 5.1 below, a few examples of peripherals are illustrated. Again, because of ongoing developments in technology, the school technology committee needs to research current peripherals at the time of purchase. Peripherals can greatly enhance the capability of a computer; therefore, considerable time and thought should go into purchasing them.

Printers. Printers are technically peripherals. Because of their presence on most computers or within most work areas, however, printers are discussed under a special category so they do not get lost among peripherals that may be less necessary.

Printers come in a variety of configurations. You need to set up the parameters of use for a given computer or work area as you consider which printer will best serve your needs. Three major types of printers are described by the manner in which they produce an image on paper or other object. First, there is the dot matrix printer, with its spinning wheel, which has been seen in many schools. Somewhat newer are the ink jet printer and the laser printer, both of which have gained considerable popularity in recent years.

Consideration of the ink jet and laser printers should revolve around intended use. Are you interested in the most economical printer and not greatly concerned with the clarity of image, or are you looking for a highly professional output? Your answer to this question, combined with a consideration of price, will lead you to the printer that may be the best selection for you at the time. Obviously, the more professional the output, the higher the cost. Are you buying a printer to give students an opportunity to print out their daily work, or do you need a printer for professional correspondence for the school?

Another consideration is networking. A printer can serve more than one computer. At some point, you may want to link several computers to one printer. As part of the overall hardware consideration, therefore, the committee needs to look at the questions of computer and printer compatibility and of networking capability. These two pieces of hardware may very well be your most-used pair.

Audiovisuals. As stated in the preassessment, audiovisual equipment is the technology that is most likely to be present in schools. In this category, we will consider televisions, VCRs, and any other related equipment.

Although you may have televisions in your school, you may have determined through your preassessment that the existing televisions are not in good operating condition or need to be replaced with sets that will better complement your plans for improvement. For example, you may have purchased 19-inch sets some ten years ago, and now realize that if you are going to use the televisions to present programs from your computer, you will better be able to do this with large-screen sets.

Again, much will depend on how you anticipate using the equipment. This needs to be clarified before you get to the point of rating equipment, because you will not be able to evaluate validly its potential if you cannot clearly identify what you will want to do with the equipment.

In addition to televisions, you will most likely use other audiovisual equipment in your comprehensive instructional program. These devices may be related to television use or may be used independently. Again, some research is needed to determine what possibilities are out there and if they may be useful to you at your school. Some of these audiovisuals are indicated below in Sample Worksheet 5.1.

Following is a list and explanation of the categories you will be asked to identify as you complete Worksheet 5.1 (Appendix L).

- Category: Identify the type of hardware you wish to consider.
- Name/Model: Identify exactly which machine you are proposing.
- Number: Indicate the proposed number of machines.
- Use: Specify the proposed users.
- Cost: Indicate current pricing.
- Comments: Use this space to note specifications, especially those that will affect compatibility of software and other machines.
- Rating: An important part of Worksheet 5.1 is rating of the hardware being considered. The rating will once again be a forced-field ranking, with the highest rating being 5. Before you get to the point at which you will be rating these computers for your use, the committee should have discussed priorities of compatibility with software, performance capabilities, and components needed or desired. The intended outcome will be the identification of the best hardware for your self-defined situation.
- Need: Here you will rate the degree of need for the proposed hardware, again using a forced-field ranking with 5 representing the greatest need. Before getting to this point, the committee should have set aside time to discuss priorities of what needs will be met with the particular piece of hardware. A central focus for this rating of need must be the school mission statement and the technology mission statement.

SAMPLE WORKSHEET 5.1 - HARDWARE NEEDS ASSESSMENT

Category	Name/Model	Number	Use	Cost	Comments	Rating	Need
Computer	PowerMac 5200	8	Classrooms	$2500@	16mb RAM, 1gb hard drive, 125 MHz, 15" monitor, 6-speed CD-ROM	5	5
Computer	IBM Pentium	2	Office	$2700@	12mb RAM, 1gb hard drive, 75 MHz, 16" monitor	5	5
Printer	HP LaserJet	1	Office	$ 800	Networkable	5	5
Printer	HP DeskWriter	3	Classrooms	$ 300@	Networkable; color	5	4
Peripheral	Iomega Jaz drive	1	Office	$ 500	1gb storage capacity per disk	5	5
Peripheral	Iomega Zip drive	8	Classrooms	$ 150@	100mb storage capacity per disk	5	4
Peripheral	ScanJet II	1	Office	$ 750	Color-scanning capability	4	3
Peripheral	L-TV presentation kit	4	Classrooms	$ 200@	Mac-compatible	4	4
Audio-visual	RCA 35" monitor	4	Classrooms	$ 850@	Video input available	4	4

HARDWARE PLAN

After completing the needs assessment, you are ready to review it and to begin to prioritize the hardware that will best be able to meet the needs of your school. Much discussion will need to take place regarding this prioritizing, in order to reach a consensus that will support the needs and mission of the school.

As stated before, since you have addressed questions regarding purpose as you proceeded through the software plan, this section may not be as time-consuming in regard to what you want to accomplish. Nevertheless, research will be needed on the types and brands of hardware that will be considered for purchase. Again, this process will be the foundation for clear and certain decisions for the good of the whole school organization. Though a number of identified needs will be listed, obviously, they cannot all be done at the same time for a variety of reasons. The committee needs to prioritize items as it moves to the planning stage. This will ensure that the plan definitely includes all the identified needs of the community. These prioritized needs will be addressed over a set time period.

After establishing priorities, you will need to set up a clear timeline. The important factor is to have a sequence for implementation and an agreed-upon rationale to support it. The more clearly these are communicated, the better you will be able to generate general support for the plan.

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The next activity, Worksheet 5.2, should be undertaken only after you have completed the needs-assessment worksheets. As was discussed in an earlier section, before you reach this point in the planning, your process for making decisions should be clearly known to all, so that once the input is received you will be able and ready to move forward with the information. As with all decisions, the mission statement of the school should be a guiding light in the discernment process.

The sample worksheet that follows is an example of a hardware plan. (A full-size blank worksheet is provided in Appendix M.) Your plan will be based on the information gathered from the needs assessment and research of the committee and will be summative in nature.

Below is a list and explanation of the categories you will be asked to identify as you complete Worksheet 5.2.

- Category: Identify the type of hardware you wish to consider.
- Name/Model: Identify exactly which machine you are proposing.
- Number: Indicate the proposed quantity of machines.
- Use: Specify the proposed users.
- Cost: Indicate current pricing.
- Person Responsible: Specify the person responsible for gathering the needed information for the purchase.
- Acquisition Date: Give the proposed date of purchase.

SAMPLE WORKSHEET 5.2 - HARDWARE PLAN

Category	Name/Model	Number	Use	Cost	Person Responsible	Acquisition Date
Computer	Power Mac 8500	8	Classroom	$2200@	Tech. coordinator	Aug. 1997
Computer	IBM Pentium	2	Office	$2600@	Secretary	Sept. 1997
Printer	HP LaserJet	1	Office	$ 750	Secretary	Aug. 1997
Printer	HP DeskWriter	8	Classroom	$ 250@	Tech. coordinator	Aug. 1997 to Jan. 1998
Television	RCA 35" monitor	8	Classroom	$ 800@	Tech. coordinator	Aug. 1998 to Jan. 1999
Presentation kit	L-TV Pro	8	Classroom	$ 200@	Tech. coordinator	Aug. 1998 to Jan. 1999

The sample above does not represent a perfect or even an actual hardware plan; it is an example of what a plan might look like when it is designed by a particular school. The prices cited are not actual prices, but rather hypothetical data for the sample worksheet.

Hardware that is projected for purchase more than six months from the creation date of the plan may need to be substituted because of price changes, revisions of the hardware, or the availability of new or more appropriate hardware to meet your identified needs.

It is also important to understand that this plan cannot be made in isolation; it must be finalized in coordination with all parts of the technology plan. Each component will have a certain degree of reliance on other parts. The hardware decisions, for example, will need to be made with the understanding of software requirements, and staff development decisions will, at least in part, be affected by the training that is needed to support the new hardware and software acquisitions.

Although it may be quite challenging at times, the planning process will give direction to the school in this area of its operation. Once again, it is important to keep the school mission statement and the technology statement at the core of decision making.

REFERENCE

Zukowski, A. A., MHSH. (1995, October/November). Into the last century: Seize the day. *Momentum 26*, 5.

SECTION 6

TELECOMMUNICATIONS

Students are curious about everything—not just what a particular school is able to teach. Distance learning lets students who would otherwise just dream take cello lessons, learn Japanese, and create an education that's limited only by their imaginations. —*Peter Weinstein and Arli Quesada, 1997*

In these closing years of the 20th century, one cannot possibly ignore telecommunications in any discussion of technology. In the age of telecommunications, schools need to become aware of and, to the degree they deem appropriate, become involved in the telecommunication process. Understanding that this is a primer, this section will look at some basic components of telecommunication. A detailed consideration of the Internet and all that is involved in it will not be given. This is not to say that the Internet is not important or significant; but the intent of this primer is to keep considerations as simple as possible, with the hope that you will follow up on the further challenges of technology once you become comfortable with the material presented in this publication.

To whet your taste for the Internet, visit the Web site of NCEA, which is located at http://www.ncea.org. From this site, hyperlinks have been established to other sites. By visiting NCEA's Web site, you will also learn the latest developments regarding the implementation of the Telecommunications Act of 1996 and the regulations established by the Federal Communications Commission.

Telecommunication is a rather simple process, if you have some basic technology hardware and a desire to get out of your school electronically. Perhaps the most basic requirement is that you have a phone line attached to a computer. We will assume that you do have these two items in place as we prepare you for telecommunicating. Understand that this section will primarily consider the use of the computer in telecommunication. This is just the beginning, however, for as you continue you undoubtedly will move on to other developing aspects of telecommunication, such as distant learning via satellite.

You will need a modem. This is the device that links the computer to the telephone line and enables transmissions to take place from one computer to another or from one Web site to your classroom or office computer. A modem enables your computer to send and receive information over the phone lines. Many newer computers come with a modem as an internal device. Often, though, an external modem must be purchased and connected to the computer as an external peripheral.

One feature of the modem that must be considered is the speed at which it receives information, or its *baud rate*. The speed is expressed in a standard unit

of measure, bits per second (bps), which may range from 2,400 bps to 56,600 bps or faster. Obviously, the faster the modem, the more desirable it is because you will not waste time waiting for information to be sent or received. Often, however, the faster the modem is, the more it will cost. In addition to these modems, newer and more powerful equipment is constantly becoming available. Your committee needs to research modems and other related equipment before final selection is made.

Telecommunication software is also needed to enable you to begin. Companies such as America Online, Prodigy, CONNECT, and AT&T will give or sell you the software and subsequently the service for telecommunication. After installing the software and connecting your computer to the phone lines via the modem, you will be ready for telecommunicating with anyone in the world.

The key points as you become involved in telecommunication are identifying why you are involved in this process, and what you will be communicating. One of the reasons you want to be clear about your telecommunication purpose is that these companies charge for the service, and often the charges are based on time used. If you are an administrator, will you be communicating with the national office, diocesan office, or peers? If you are a teacher, will you be researching curriculum ideas with your peers? If you are a student, will you be developing pen pals in a school many miles away?

In addition to providing the basic communication service, the telecommunication companies often offer the opportunity to conduct a variety of research. This is a resource that can be a valuable information tool and a preparation for using the Internet.

Below is a list of the categories you will be asked to identify as you complete activity/Worksheet 6.1 (see Appendix N). A sample worksheet is presented immediately afterward.

- Category: Indicate if it is hardware, software, or a service provider that supports telecommunication.

- Name/Model: Identify the specific hardware, software, or service provider you are considering.

- Task: Describe what you wish to accomplish.

- Use: List who will use the proposed item.

- Comments: Use this space to note specifications, especially ones that will affect compatibility of software and hardware.

- Cost: Indicate the current price.

- Rating: An important part of this worksheet is this rating. The rating, once again, is a forced-field ranking with the highest rating being 5. Before you get to this point, the committee should have discussed the effectiveness of the telecommunication hardware, software, and service provider being considered.

- Need: Here you rate the degree of need for the proposed telecommunication hardware and software, again using a forced-field ranking with 5 represent-

ing the greatest need. Before getting to this point, the committee should have discussed priorities of what needs will be met with the ability to telecommunicate. The central guides for this discussion must remain the school mission statement and the technology mission statement.

SAMPLE WORKSHEET 6.1 TELECOMMUNICATION ASS

Category	Name/Model	Task	Use	Comments	Cost	Rating	Need
Service provider	America Online	Provide a telecommunication network	Office Teachers	Good local access numbers	$15@/month	4	4
Service provider	CONNECT	Provide a telecommunication network	Office Teachers	Good local access numbers	$10@/month	4	4
Service provider	CompuServe	Provide a telecommunication network	Office Teachers	Good local access numbers	$19@/month	4	4
Modem	Global Village 56.00	Link computers via phone lines	Office Teachers	Mac or IBM	$125	5	5
Modem	US Robotics 56.00	Link computers via phone lines	Office	Mac or IBM	$175	5	5

The next activity should be done only after you have completed the assessment worksheets. As was discussed in an earlier section, before you reach this point your process for making decisions should be clearly known to all, so that once the input is received you will be able and ready to move forward with the information. As with all decisions, the mission statement of the school should be a guiding light in the discernment process.

The sample worksheet that follows is an example of a telecommunication plan. A full-size blank worksheet is provided in Appendix O. Again, this plan is summative and based on the information gathered from the needs assessment and the research of the committee.

The following list explains the categories you will be asked to identify as you complete Worksheet 6.2.

- Category: Identify the type of telecommunication hardware, software, or service provider you wish to consider.
- Name/Model: Identify exactly the purchase you are proposing.
- Number: Indicate the quantity of the proposed items.
- Use: Specify the proposed users.
- Cost: Indicate current pricing.
- Person Responsible: Specify the person responsible for gathering the needed information for the purchase.
- Acquisition Date: Indicate the proposed date of purchase.

SAMPLE WORKSHEET 6.2 - TELECOMMUNICATION PLAN

Category	Name/Model	Number	Use	Cost	Person Responsible	Acquisition Date
Modem	Global Village	2	Office Computer lab	$125@	Tech. coordinator	Nov. 1997
Telecommunication provider	IBM Pentium	2	Office Computer lab	$ 30@ monthly	Tech. coordinator	Nov. 1997

This plan is not intended to represent an actual or a perfect plan; it is a model for plans that will be designed for a particular school site. The prices cited are not actual prices, but rather hypothetical data for the worksheet. Hardware or services that are projected for purchase more than six months from the date the plan is created may need to be substituted because of price changes, revisions, or the availability of new or more appropriate hardware or services that meet the identified needs.

As was stated before, this plan cannot be made in isolation. The planners must always keep this in mind. Each component relies on other parts of the technology plan and the school's curriculum. Thus, the components must be finalized in coordination with all parts of the plan and the curriculum.

Telecommunications is a new and growing way in which to communicate and to learn. Much time and study need to be put into its use and effects. Reiterating, it is important to keep the school mission statement and the technology mission statement central in decision making. Regularly consult the NCEA Web site (http://www.ncea.org) for the latest information on telecommunications.

REFERENCE

Weinstein, P., & Quesada, A. (1997, May/June). Education goes the distance. *Technology & Learning, 17*, 23.

SECTION 7

STAFF DEVELOPMENT

For any technology implementation plan to be successful, it must allocate sufficient time and resources for a focused staff development program. Many schools are discovering that traditional models of staff development are ineffective for teaching computer use and for helping teachers to develop methods to use computers as instructional tools. —*Donna Benson, 1997*

The successful implementation of technology into a school rests as much with the training of staff as it does with the purchase of equipment. Careful thought needs to go into a staff development plan so that the staff can utilize fully the innovations that are being proposed.

Some assessment should be done to determine the level of competency of the staff in general and of each member in particular. Looking at staff needs from this perspective, you can determine which programs in general need to be the subject of training and which teachers in particular can possibly serve as trainers or mentors for the programs in which they have established competency.

Training should focus on programs that teachers have access to and that they will be using. If they are to be trained in a word processing program or in a grade book program, then they should typically be expected to use that program. Teachers should not be trained in too many programs at one time, however. If the staff is composed primarily of new users, then mastering one program before moving on to another is the prudent way to proceed. To make realistic progress, a specific plan should be developed that can be reviewed and revised periodically.

The following is a list of the categories you will be asked to identity as you complete Worksheet 7.1 in Appendix P.

- Task: Indicate what task the staff needs to be able to do.
- Use: Identify who will use the training.
- Program: Specify the program that will be used to perform the particular task.
- Platform: Specify the type of computer that will be used (IBM or Mac).

- Rating: An important part of this worksheet is this rating. It attempts to assess which program would be most beneficial for staff training. The rating is again a forced-field ranking with 5 as the highest rating. Before you get to this point, the committee should have discussed what tasks the staff need to be able to perform on the computer.

- Need: Here you rate the degree of need for the proposed software training, again using a forced-field ranking from 1 to 5, with 5 representing the greatest need. Before getting to this point, the committee should have discussed priorities of what needs will be met with the ability to use the software proposed. Central guiding principles remain the school mission statement and the technology mission statement.

SAMPLE WORKSHEET 7.1: TRAINING NEEDS ASSESSMENT

Software Task	Use	Program	Platform	Rating	Need
Word processing	Office: faculty	Microsoft Works	Mac	5	5
Spreadsheet	Office: faculty	Microsoft Works	Mac	5	4
Database	Office: faculty	Microsoft Works	Mac	4	4

The next exercise, Sample Worksheet 7.2, is an example of a staff development plan. A full-size blank worksheet is provided in Appendix Q. Again, this is a summative plan that is based on the information gathered from the needs assessment and the research of the committee.

The plan assumes there is sufficient expertise among the staff to conduct the staff development workshops. This will not always be the case, however. Should the training needs go beyond the expertise of the staff, then the community resources need to be tapped. Start with local consultants, professional organizations, or local colleges. Staff development is extremely important and should not be taken lightly. This may mean spending some time putting the plan together and spending some money to get top-notch instructors.

Listed below are a list and explanations of the categories you will be asked to identify as you complete Worksheet 7.2.

- Topic: Identify the subject matter of the training.

- Trainer: Name the person who will do the training.

- Date: Give specific dates for the training.

- Time: Provide exact starting and finishing times.

- Place: Indicate where the training will be held.

- Outcome: Specify the performance outcomes for each session.

SAMPLE WORKSHEET 7.2 – STAFF DEVELOPMENT PLAN

Topic	Trainer	Date	Time	Place	Outcome
General introduction	Dan	12/1/97	3-5 p.m.	Computer lab	To have an understanding of Microsoft Works program and its special features
Page setup	Bill	1/8/98	3-5 p.m.	Computer lab	To be able to set up a word processing page
Lab practice	Bill	1/30/98	3-5 p.m.	Computer lab	To practice and apply techniques of page setup
Formatting	Helen	2/5/98	3-5 p.m.	Computer lab	To be able to use different formats with one document
Lab practice	Helen	2/12/98	3-5 p.m.	Computer lab	To practice and apply techniques of page formatting
Graphics	Dan	3/6/98	3-5 p.m.	Computer lab	To be able to use graphics within a word processing document
Lab practice	Dan	3/13/98	3-5 p.m.	Computer lab	To utilize at least two graphics within a word processing document

This sample does not represent an actual or a perfect staff development plan; it is merely an example of a plan that will be designed for a particular school site.

As stated before, this plan cannot be made in isolation. Its components must be finalized in coordination with all parts of the technology plan and the school's curriculum. Each component has a certain degree of reliance on other parts.

Staff development is extremely important. It needs to be specific in its direction and provide sufficient opportunity for practice. During the lab practice times, informal assessment can be done of the effectiveness of the program and of other needs that arise.

REFERENCE

Benson, D. (1997, January). Technology training: Meeting teachers' changing needs. *Principal, 76.*

SECTION 8

FUNDING

As a school draws up its technology plan and budget, however, it soon becomes apparent that the price tag is high! Establishing partnerships is a way not only to help the school but also to benefit the entire community by developing resources and preparing citizens for a technology future. —*Gail Morse, 1995*

In the previous sections, we considered a number of components for your technology plan. The discussion of funding was intentionally placed near the end of this book. Before you try to identify how you are going to fund a project, you need to have a clear and thorough understanding of what the project is attempting to do and why it is attempting to do it. Without this understanding you are unlikely to get funding for any type of project, technology or otherwise.

In addition to knowing the purpose and scope of your project, some of the details must be in place before you begin to consider financing possibilities. This does not mean that you must have identified every single piece of equipment that will be needed—that would not be practical or realistic for a long-range plan in technology. However, by this point you should have a clear picture of where you are heading with the project and be able to begin to focus on the funding of major components of it.

Having processed all the activities presented up to this point, the committee has a greater degree of ownership for the plan, which hopefully will yield a greater degree of commitment to see that it is funded properly. The leadership for securing funding will typically rest with the principal, or at least a mentoring guidance and approval of the principal will be needed.

In looking at the funding of the technology plan, you must realize that it will most likely be a multiyear endeavor that will need to look at a variety of sources to achieve its financial goal. Most essential in approaching the challenge of funding is to believe and communicate to others that this technology is not a fad and that it will become a significant component of your organizational and academic community. It will help the school to function more efficiently and effectively in organizational tasks, and it will become part of an instructional strategy that will have considerable impact on learning for the children. It is not a whim but a process that you cannot afford to be without in the future.

The following activity, Sample Worksheet 8.1 - Technology Priorities, will help you to begin to explicate this information. This activity, although brief, should reflect the discernment process that has taken place with your committee for each of the

preceding activities. Now you will process your priorities, based on all the work you have done up to this point. Now you begin to set your goals, put an anticipated price tag on them, and set out some initial intended outcomes.

As stated previously, the decision-making process should be well-known and understood. This is especially important at this point, since you need to be concentrating on decisions now. The process should be well in place so that you can efficiently and effectively reach decisions that will help the children of your school. As always, the mission statement of the school and the technology mission statement should be constant points of reference.

SAMPLE WORKSHEET B.1 - TECHNOLOGY PRIORITIES

Priority	Cost	Intended Outcome
Computers, software, and training for office staff	$8,000	All family- and student-data training for office will be computerized, reducing the clerical time required to produce more accurate and current information.
Computers, software, and training for every classroom teacher	$5,000	Time required for clerical tasks will be reduced by 50 percent, and use of technology will increase student motivation and achievement.
Three computers for every classroom	$6,500	Students will have access to technology daily, supporting motivation for learning and addressing a variety of learning styles for increased student achievement.

Notice that these priorities are few, simple, and to the point. They do not go into unnecessary details or into how they will be accomplished; rather, they focus on clear and understandable outcomes that can be given broad-based support. The details need to be worked out, obviously, but to gain as much support as possible as you seek funding, you want to provide information that can be remembered and understood and that is without unnecessary details that can be debated.

As you look to a new way of functioning as a community and to new ways of learning, you need to stretch your thinking regarding funding this new technology. You should consider as many funding possibilities as are reasonable for your situation. First, look at current patterns of expenditures in the operating budget. Are there monies available that could be better spent than they are currently? Look at the instructional budget area. How much money is spent on pure paper-and-pencil activities, e.g., workbooks and drill sheets? Does such spending reflect your philosophy of learning for the children? Do you need to reallocate some of the funds available? Is there any special-project money that could be earmarked for this special project of technology? Is there money for new equipment or other capital expenditures that is not targeted for some essential item? Perhaps the greatest challenge will come in the next fiscal budget process, at which time you could introduce a new line item in the budget to support technology.

After examining the budgeted monies, look for other sources of funding. Are funds raised each year that may not be specified for the operating budget or for a project? One of the least-favorite things to do at a school these days is to start

a new fund-raiser. There may be a way around this mentality. If an established fund-raiser has funds earmarked for a particular project, perhaps you can reallocate the monies from this event. Could a guaranteed amount be allocated to this existing fund-raiser project and the technology fund receive whatever is raised above that guaranteed amount? This suggestion could make the fund-raiser a major moneymaker at your school, since people today are inclined to support technology projects. Such an approach supports the existing project and gives parents an opportunity to help get technology in the school. Parents typically are willing to get behind movements to support acquiring technology for their children's use at school.

Another avenue you might consider is writing grant proposals to foundations. This may seem pretty impossible at first thought, but schools are doing this every day. Why should you be left out? One key to grant writing is to find the foundation that wants to fund a project like yours for a school like yours. NCEA has published writings in this area to assist you in putting together your grant proposal (see references at the end of this section). Why not get a committee of writers to work specifically on this?

Local and national companies are known to support schools' efforts in technology because they understand the benefit of a technologically literate future workforce. They are not going to completely fund your technology plan, but they have been known to find ways to reach out to schools that are aggressively going after technology for their students. A striking example of this is the Net Day that was promoted and supported by businesses in California during the fall of 1996. Schools all over the state received monetary and personnel support to wire the schools in preparation for accessing the Internet. The best way to find out what is possible is to get to know the business community through your various community organizations, especially the chamber of commerce, and then to pursue possibilities once you have established relationships.

One way to get funding for your technology project that seems to be underused is to seek donations. It often is amazing how people are willing and able to support a project such as this. This is not to suggest that a major solicitation drive be initiated, which may conflict with an existing school, parish, or diocesan annual campaign. By clearly communicating what you are attempting to do and what your present needs are, some surprising results could occur. Again, a major phone drive might not be appropriate in your situation, but a regular series of articles in the school bulletin or in the parish bulletin can be effective.

Some businesses donate their old computers to schools. Though these computers will not be state-of-the-art, they may well serve one of the goals in your technology plan. Some schools have accepted these donations and then sold them, using the money raised to purchase items needed for the school plan. One principal said, "Every time a donated computer comes in the front door of the school and it doesn't fit into the school plan, it goes out the back door of the school sold."

Much of what is suggested in this section regarding funding is covered in the various development publications published by NCEA. These ideas, however, just begin to scratch the surface of possibilities. What is important is to believe in the plan that you put together, to share it with all the appropriate publics, and then to pursue funding the project with a passion—a passion for not just having this technology in the school but also for having technology that is needed for the children to learn to their fullest and that appropriately prepares them for the technological society in which they will live.

Without a plan, none of these ideas is likely to get you where you want to be financially. You need to spell out your target financial goals so that you have a clear idea of where your money will come from and where you need to spend your time making this happen.

The activity below is a sample summative worksheet indicating the sources of your funding for this project and the amounts. A more detailed action plan should be developed for each source, indicating activity, person(s) responsible, estimated costs, timeline, and outcome; an example of such a plan follows. A full-size blank copy of Worksheet 8.2 - Funding Sources and of Worksheet 8.3 - Funding Plan can be found in Appendices S and T.

SAMPLE WORKSHEET 8.2 - FUNDING SOURCES

Funding Source	Target Amount
Operating budget	$10,000
Special fund-raising event	$ 5,000
Grants	$25,000
Partnerships	$ 5,000
Donations	$ 5,000
Total	$50,000

Sample Worksheet 8.3 below is merely an example of how you might proceed to put together a specific action plan to finance your technology priorities. This plan is intended as a model that will be adjusted to meet the needs and priorities of each school. As you review it, notice it addresses only the area of grant writing. All other areas of the funding plan should have similar specific action plans to support their financial objective.

SAMPLE WORKSHEET 8.3 - FUNDING PLAN

Activity	Person(s) Responsible	Estimated Costs	Timeline	Outcome
Clarify priorities: discuss agreed-upon material and support	Grant coordinator	$ 0	30 days	Identify assistance required
Research library and Internet resources about foundations; consult schools that have written proposals; call foundation for information	Foundation subcommittee	$25 for research and phone calls	30 days	Identify potential foundations to be sent proposals
Review information received from foundation; consult schools with successful proposals; call foundation for clarification	Foundation subcommittee	$10 for phone calls	21 days	Identify specific proposal requirements of foundation
Review material from grant committee and foundation subcommittee; review successful proposals; write first draft	Proposal writing subcommittee	$ 0	30 days	Develop initial grant proposal
Review first draft; compare to foundation requirements; compare to priorities and mission statement; compare to successful model; rewrite as necessary; arrive at consensus	Proposal writing subcommittee; grant committee; principal	$ 0	45 days	Write final proposal and have it approved
Produce appropriately typed final proposal and send by registered mail	Principal	$15 for mailing	7 days	Submit final proposal
Call foundation to confirm receipt of the proposal and to ask if additional information or phone calls are needed	Principal or committee chair	$ 5 for phone calls	7 days	Follow up on the proposal

Although it may seem detailed and lengthy, the action plan should be as complete as possible to ensure the success of the plan. By identifying the person(s) responsible for tasks, you can give the tasks to an appropriate number of people so as not to burn out any individual in the process. The strategy of soliciting people for specific tasks for a specific timeline may aid in the recruitment of volunteers and help to build greater ownership and support for the project.

REFERENCES

Collins, K. C., SFCC. (Ed.). (1997). *Getting started: An overview of school development practices.* Washington, DC: National Catholic Educational Association.

Mathis, E. D., & Doody, J. E., FSC. (1994). *Grant proposals: A primer for writers.* Washington, DC: National Catholic Educational Association.

Morse, G. (1995, October/November). Win/win partnerships: School and community. *Momentum 26,* 59.

Safranek, T. W., & Usyk, P. A. (1996). *Steps for launching a capital campaign.* Washington, DC: National Catholic Educational Association.

Tracy, M., SNJM. (1990). *Steps in direct solicitation: Preparation, presentation and follow-up.* Washington, DC: National Catholic Educational Association.

SECTION 9

PUTTING THE PLAN INTO ACTION

We believe our efforts are achieving the goal spelled out in the mission statement of our masterplan—"to offer the best educational opportunity for all students to reach their potential and to allow each to learn with excitement, a sense of discovery and a sense of wonder." —*Marian Stuckey, 1995*

To accomplish the tasks outlined in the previous sections will take at least a semester or, more realistically, a full school year or more. Once you get into the process, however, you want to build in as much success as possible, and that will not necessarily happen quickly. It takes time to get it done right, so you will need to be patient.

Let us consider what has been outlined thus far. First, you did a preassessment to see what technology software and hardware are presently in the school. Once this was accomplished, needs assessments were done for technology software, hardware, telecommunication, and staff development, followed by action plans for each area. After establishing your directions in each of these areas, you set up priorities lists with cost projections and action plans for funding.

Reflecting on the work to be done can be overwhelming. To make it more plausible, design a timeline for activities, so that you can celebrate milestones and keep the plan on target so it does not take a lifetime to complete! Utilizing a timetable will also give you built-in opportunities to perform needed evaluation. The evaluation should be twofold. One significant question that needs to be addressed is, "Are we staying on our timeline?" If you are not, determine what the reason is and if you need to revise the timeline. The second question is, "Are we meeting our purpose as identified in the technology mission statement?"

Sample Worksheet 9.1 is an example of a timeline for putting together a technology plan. It is intended as a model that will need to be adjusted to meet the needs and priorities of each school. As you review it, notice that it completes the planning stage within a year. This may vary from school to school. Also, at the end of the planning stage there is a reconfirmation of committees. This provides a natural time for the transition of committee members or the reaffirmation of existing members.

SAMPLE WORKSHEET 9.1 - TIMELINE

Month	Activity	Outcome
June	Organizing meeting	Technology committee formed
	Technology committee meets	Mission statement established and communicated to all publics; subcommittees formed and chairpersons appointed
July	No meetings	
August	Technology committee meets	Timelines established
	Subcommittees meet	Preassessment completed
September	Technology committee meets	Subcommittees' findings reported
	Subcommittees meet	Needs assessment started in each area
October	Technology committee meets	Update presented on needs assessments; technology mission statement reaffirmed
	Subcommittees meet	Needs assessments continued; required research started for identified needs
		Technology update prepared
November	Technology committee meets	Subcommittees findings reported; subcommittees technology update given
	Subcommittees meet	Research and action plan finished
December	No meetings	
January	Technology committee meets	Subcommittees' action plans submitted for discussion and approval
	Subcommittees meet	Necessary adaptations made to action plan
February	Technology committee meets	Subcommittees' action plans accepted by group
		Group technology update presented
March	Technology committee meets	Report prepared and presented to principal and then to school board
April	Technology committee meets	Significant concerns from principal or school board reported
	Subcommittees meet	Plan implementation started
May	Technology committee meets	Subcommittees' implementation progress reported; technology update presented; subcommittees confirmed for coming school year
	Subcommittees meet	Implementation continued

The two types of meetings presented in the timeline are those of the technology committee and of the subcommittees. You may choose to have all the members at the technology committee meeting be representatives of the various subcommittees.

or you may choose to expand the subcommittees and have others on them who report to the technology committee. Use the format that works for your situation.

Because this may be a long process and since you will want to maintain support for your program, you need to keep your various publics aware of what is going on in this process. You may want to use Worksheet 2.3 (see Appendix D) or some form of that worksheet to gather information from your various committees, and then use that information to prepare updates on the technology plan. You will notice *technology update* appears several times in the timeline. Adjust the scheduling of these to fit your local needs.

The intent of this book has been to provide some basic direction for developing a plan to implement technology into the local school. Remember that this is a primer on technology. There are other areas that you will want to get involved in once you have established the presence of technology in the life of your school. Use this book for what it is intended—to get you and your school involved in the use of technology—and then move on to the bigger and more challenging tasks that await you.

There are some final comments you need to keep in mind as you are pulling your plan together. First, you are not alone and should not be working alone in this process. You are part of a bigger picture—your local cluster, your diocese, your state Catholic conference, and NCEA. Become active and involved in your broader community of Catholic educators. We should be learning from each other and not from working in isolation. We need to work for integration of technology planning, so that we can support and challenge each other as necessary. We do not need to be off in our little corner of the world, each of us reinventing the wheel. Instead, we need to be working collaboratively for the benefit of all.

Finally, the plan is never done! This is not a negative comment and should not be discouraging. It does, however, identify reality. We are all aware of evolving technologies and the ever-changing needs of our community. Why would you think the plan would ever be done? The reason for mentioning it here is that you need to be aware that the process is just beginning. Plans will need to be evaluated and updated annually. The technology committee will need to be made a standing committee and not just an ad hoc group. Line items will need to be established in the budget for technology. In essence, you must understand that a long-term commitment is needed for and by the school community, and it needs your leadership to happen. Point to the future!

REFERENCE

Stuckey, M. (1995, October/November). Schools working together— It just makes sense. *Momentum, 26*, 8.

APPENDICES

APPENDIX A

WORKSHEET 1.1 – TECHNOLOGY AND THE SCHOOL PHILOSOPHY

1. Identify the school's philosophy statement.

2. First individually, then as a group (faculty and/or committee), identify how you believe technology can support the philosophy of the school.

APPENDIX B

WORKSHEET 2.1 - SCHOOL TECHNOLOGY MISSION STATEMENT

Directions: Write some "We believe" statements about technology and the school's program. Cite, where possible, resources that would support the statements.

"We Believe" Statements about Technology	**Resource Citation**
1.	
2.	
3.	
4.	
5.	
6.	

After the group comes to a consensus on the belief statements, these are used as the basis for the group to write its brief technology mission statement.

Technology Mission Statement

_____

_____

_____

_____

_____

_____

APPENDIX C
WORKSHEET 2.2 - THE TECHNOLOGY COMMITTEE

Expertise	Person
1. Knowledge of Networks	_____
2. Knowledge of Software	_____
3. Fund-raiser	_____
4. Curriculum and Instruction (Faculty member)	_____
5. Curriculum and Instruction (Faculty member)	_____
6. Local Business/User	_____
7. Parent/School Board	_____
8. Parent/Home and School Association	_____
9. Other	_____

Note: People selected for positions 4, 5, 6, 7 and 8 do not need to be technology experts.

APPENDIX D
WORKSHEET 2.3 - TECHNOLOGY UPDATE

Date

What has happened?

Who were the contributing people?

What impact did it have on the students?

What mode of communication was used?

What are the next steps?

APPENDIX E

WORKSHEET 3.1 - EXISTING TECHNOLOGY HARDWARE

Equipment	Number	Brand	Serial Number	Location	Date Acquired	Condition	Comment

APPENDIX F

WORKSHEET 3.2 - EXISTING TECHNOLOGY SOFTWARE

Title	Category	Format	Serial Number	Hardware Required	License	Grade	Subject	Comment

APPENDIX G

WORKSHEET 3.3 - BUILDING'S EXISTING ELECTRICAL OUTLETS AND WIRING

Key: **E** = electrical outlet; **B** =circuit breaker; **F** = fuse box; ←**N**→ = network

APPENDIX H
WORKSHEET 3.4 - CLASSROOM SETUP

APPENDIX I
WORKSHEET 3.5 - COMMITTEE REFLECTION

Equipment: Was I aware of all the different types of equipment that were considered to be technology?

Number: Was I aware of the amount of technology present in the school?

Location: Is the equipment located to be used primarily for administration or instruction?

Condition: Is the equipment in good working order? Is it being maintained?

Use: Is the equipment being used to its full potential?

These few important questions for reflection will begin to move you from basic facts to making some critical decisions about technology in the school. Committee members may wish to respond to each of the questions privately first and then come together to arrive at a consensus.

APPENDIX J

WORKSHEET 4.1 - SOFTWARE NEEDS ASSESSMENT

Software Task	Category	Target Audience	Type of Program	Examples	Platform	Need	Rating

APPENDIX K

WORKSHEET 4.2 - SOFTWARE PLAN

Task Addressed	Target Audience	Program	Cost	Person Responsible	Acquisition Date

APPENDIX L

WORKSHEET 5.1 - HARDWARE NEEDS ASSESSMENT

Category	Name/Model	Number	Use	Cost	Comments	Rating	Need

APPENDIX M

WORKSHEET 5.2 - HARDWARE PLAN

Category	Name/Model	Number	Use	Cost	Person Responsible	Acquisition Date

APPENDIX N

WORKSHEET 6.1 - TELECOMMUNICATION NEEDS ASSESSMENT

Category	Name/Model	Task	Use	Comments	Cost	Rating	Need

APPENDIX O

WORKSHEET 6.2 - TELECOMMUNICATION PLAN

Category	Name/Model	Number	Use	Cost	Person Responsible	Acquisition Date

APPENDIX P
WORKSHEET 7.1 - TRAINING NEEDS ASSESSMENT

Software Task	User	Program	Platform	Rating	Need

APPENDIX Q
WORKSHEET 7.2 - STAFF DEVELOPMENT PLAN

Topic	Trainer	Date	Time	Place	Outcome

APPENDIX R
WORKSHEET 8.1 - TECHNOLOGY PRIORITIES

Priority	Cost	Intended Outcome

APPENDIX S
WORKSHEET 8.2 - FUNDING SOURCES

Funding Source	Target Amount

APPENDIX T
WORKSHEET 8.3 - FUNDING PLAN

Tasks	Outcome	Person(s) Responsible	Possible Costs	Timeline

APPENDIX U
WORKSHEET 9.1 - TIMELINE

Month	Activity	Outcome

ABOUT THE AUTHOR

Jim Brennan, Ed.D., is a native of Chicago. He received his bachelor's degree from Loras College in Dubuque, Iowa, and his master's degree from Chicago State University in Chicago. In 1979, moving to the San Francisco area, he began graduate work at the University of San Francisco, where he received a doctorate from the School of Education in Organization and Leadership in 1983.

Since 1969, Dr. Brennan has worked in the ministry of Catholic education in the Archdiocese of Chicago, the Diocese of Oakland, and the Diocese of San Jose. He has served as a teacher and administrator at the elementary, secondary, and higher-education levels. Currently, Dr. Brennan is assistant superintendent of schools for the Diocese of San Jose, California.

Dr. Brennan was elected as Western States regional representative to the NCEA Department of Elementary Schools Executive Committee in 1983; was accepted into the NCEA National Catholic Principals Academy in 1992; and was elected president-elect of the Department in 1997.

In honor of his 25th year in Catholic education, Dr. Brennan was presented with the Presidential Award from NCEA during Catholic Schools Week in 1994.

Jim lives in Fremont, California, with his wife Brenda and their two children, Megan, age 9, and Colin, age 3.

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